

Training in the National Weather Service

Objectives, Present Situation, Improved Responsiveness to Vision 2005

Executive Summary

The Challenge

The National Weather Service's strategic plan, Vision 2005, provides a comprehensive Agenda for Action and Interlocking Goals for Advancement. Strategic goal 3 Change the NWS Organizational Culture explicitly requires training, and mandates enhance the professional development and training program for our work force to include teamwork, leadership, diversity, EEO, customer service, and implementing change. Other goals in the plan are difficult to achieve without education and training in several fields. In addition, support and counseling of staff in times of institutional and personal change can be partially assisted by, or delivered through, e-training or traditional training techniques.

Proposed Action

This document proposes looking at NWS training activities, indigenous and other, to assess current strengths and room for improvement related to Vision 2005. It proposes the formation of a largely in-house team to assess all aspects of training, including the perceptions that existing NWS training facilities are underutilized, and that in-house training should emphasize skills related to meteorology and related technology.

Form a mostly in-house team to assess possibilities for enhanced benefits from modifying NWS training efforts. The team might consist of some members of the NWS Training Center, one person close to the Assistant Administrator, representatives of Offices and/or Regions, and representatives of the wide-ranging staffing situations within NWS.

It is proposed that this assessment exploit the availability of David Hastings of NESDIS, who is a participant in NESDIS Leadership Competencies Development Program through October 2001. Hastings is serving on detail in Silver Spring (partly under Greg Mandt, his mentor in the LCDP) through November 20. With appropriate participation by NWS staff, Hastings' participation may help catalyze an appreciation of the current roles of indigenous and external training facilities.

A team met in late March 2001 to address these issues. At that time several members of the team were enthusiastic about the topic, but had difficulty envisioning available time to work on it.

Deliverables might include:

Materials for a briefing on (?)training, staff development (?):
A report with recommendations, with supporting materials (case studies from other organizations, resources for facilitating recommended approaches, etc.)

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Training in the National Weather Service Objectives, Present Situation, Improved Responsiveness to Vision 2005

Introduction

The National Weather Service's strategic plan, Vision 2005, provides a comprehensive Agenda for Action and Interlocking Goals for Advancement. Strategic goal 3 Change the NWS Organizational Culture explicitly requires training, and mandates enhance the professional development and training program for our work force to include teamwork, leadership, diversity, EEO, customer service, and implementing change. Other goals in the plan are difficult to achieve without education and training in several fields. In addition, support and counseling of staff in times of institutional and personal change can be partially assisted by, or delivered through, e-training or traditional training techniques.

Few organizations can anticipate or build indigenous training capabilities to meet all these objectives. In some cases, it may be better to let existing experts outside NWS provide the materials for such changes. In other cases, NWS employees can themselves figure out best paths to achieving goals. However, in some areas, NWS may be better placed to develop in-house capabilities where it previously relied on outsiders (or perhaps previously did not emphasize a particular issue). In some of those areas, indigenous capabilities may be better handled with outside participation in some aspects of that development.

Vision 2005 implementation must compete for limited budgetary and personnel resources. For implementation to be successful, it may need to free up resources through increased productivity and other gains, beyond any support that Congress may offer such a vision. Training will help in many aspects of this implementation, but that training must be cost-effective.

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Background: The NWS Training Center

According to its Website, The National Weather Service Training Center (NWSTC) in Kansas City, MO provides performance-oriented resident courses, computer based training, and specialized learning modules to meet the unique training requirements of the NWS. The Training Center also offers its resources to other components of NOAA, other Federal Agencies, the World Meteorological Organization (WMO), and foreign nationals whose countries have cooperative meteorological agreements with the United States. NWSTC Courseware falls into these major categories; Systems Administration, Equipment Maintenance, Hydrometeorology, and Management.

The mission of the National Weather Service (NWS) Training Program is: To ensure the National Weather Service's training needs are met in a cost-effective manner by sustaining an efficient and effective workforce.

To support this mission, this site provides a centralized training resource for all National Weather Service employees. Specifically, it provides a complete library of available NWS training, along with links to various training sites where NWS employees can find training material for their use. This site also contains Baseline Proficiency Standards for all NWS staff along with criteria for evaluation, and information on the Professional Development Series. Thus, this site is meant to serve as a national clearinghouse for all NWS staff to easily identify training needs and locate needed training to remedy any deficiencies.

The goals of the NWS Training Program are:

- Establish a logical, flexible and responsive training infrastructure to quickly translate field training and education requirements into easily accessible, usable and effective training materials.
- Implement an efficient, open and consistent process for defining and establishing priorities for NWS training requirements.
- Create an integrated model for defining required knowledge, skills and abilities to successfully perform job tasks. These definitions will be easily accessible and understood by users, and are used by the trainers as the template for development.
- Develop annual implementation plans (IPs) for training and science support to ensure responsiveness to field requirements and to sustain the high level of science and technical infusion required to maintain the high forecast standards of the NWS.
- Create a process to facilitate rapid response to new or changing training priorities within any fiscal year. Identify requirements that cannot be met due to resource limitations or additions to training priorities and raise to upper management.
- Establish an effective evaluation process to ensure that staff are reaping the intended benefits of training. Involve local supervisors in assessing the impact of training on job performance and providing feedback to the Team.

Summary: The NWS Training Center's Website emphasizes technical training. However, other forms of training may be beneficial to implementing Vision 2005.

The Challenge: Training and Vision 2005

Vision 2005 (Appendix A) lists numerous goals that can be better met with training related resources. These include traditional areas of technology training that might normally be associated with strategic goals 1 and 2. However, strategic goals 4 and 5 normally need diversity awareness and interpersonal skills, lifestyle management (improved handling of conflicts that have crossover effect between home and work - and vice versa), improved administrative and planning skills, and skills for coping with change. All five strategic goals could benefit from improved leadership capabilities throughout the organization.

Traditional paradigms for lifestyle management, for example, may be an arena for changed focus. Previously, various employees received occasional mailings from private training vendors on short courses such as differences among people, dealing with difficult people or handling stress at work or home. Supervisors/managers may occasionally take such courses. But when an individual is impacted by such a workplace problem, s/he should not have to wait for a flier, for training approval, for the course to be held. S/he should be able to check out a video or go to Web-based training (which in a way would also be counseling) to overcome the challenge. The quicker and more effectively an employee overcomes the challenge, the more quickly morale and productivity around that employee is improved.

How much should be left to formal outside training, or to chance? How much should be done in-house?

There are numerous resources to help guide a NWS training assessment task force. Other institutions have already developed their own approaches to training, which a NWS-wide assessment could benefit from.

Appendix B. links to the Los Alamos National Laboratory's website on self-directed learning tools.

Appendix C. links to the American Society for Training & Development's website on e-learning.

Appendix D. gives the NOAA-wide overview of Survey-Feedback-Action results. Note that NWS is approximately in the middle of rankings of NOAA offices for overall job satisfaction, that non-supervisors/managers are less happy with their jobs than managers, that non-scientific/technical people tend to be less happy, that nonwhites and females tend to be less happy than white males, and that communication issues rank highly among perceived problems in the organization. These are areas where targeted training and awareness resources could benefit workforce morale (and thus, presumably, satisfaction and productivity).

Summary: Current trends in training programs include work-life issues that formerly were left to the employee, or to counseling programs. Such training may benefit employee job and personal satisfaction, and thus workplace productivity and morale. When does NWS gain materially as well as immaterially by improving employee morale?

Many private companies offer training in such subjects, as well as in other skills related to Vision 2005. When should NWS rely on outside general-purpose courses, contracted classes special-purpose for NWS staff, in-house resources, or leave matters to the employee? When does a new training tool become cost-effective because of productivity gains or other reasons?

Proposed Action

This proposal recommends that NWS training program form a mostly in-house team to assess possibilities for enhanced benefits from modifying NWS training efforts. The team might consist of some members of the NWS Training Center, one person close to the Assistant Administrator, representatives of Office and/or Regions, and representatives of the wide-ranging staffing situations within NWS. However, the team should probably be small enough to be able to focus on completing a report within a reasonable time.

Questions may include:

What have been the traditional objectives of NWS training? Are these appropriate to effective implementation of Vision 2005?

What is the present situation? How have the traditional objectives of NWS training been implemented? Has this been effective? How well have existing facilities been utilized? Is this appropriate to effective implementation of Vision 2005?

Should training be broadened beyond the current primary emphasis on technical topics to respond to weaknesses suggested by SFA, corporate culture, counseling (morale/productivity building) and/or other areas?

Might the Web or video media supplement/complement existing techniques in specific areas? Do such courses exist already in the marketplace, or should NWS take the initiative?

In what subjects are NWS-specific training materials worth the additional effort to produce and conduct such training? Are materials targeted at NWS situations desirable in some subjects? Is the need sufficiently widespread within NWS for cost-savings to occur? Is increased utilization of the NWS Training Center worth investment in training

in subjects not currently handled by NWSTC?

When should NWS develop materials in-house, vs. contracting out the development of new NWS course materials, vs. using vendors to fully conduct certain courses?

If NWS should develop its own materials, can these be designed to make them useful to other organizations, resulting in additional utilization of NWSTC facilities and personnel?

Deliverables from the study might include:

A report with recommendations, with supporting materials (case studies from other organizations, resources for facilitating recommended approaches, etc.)

A compilation of useful Websites discussing or presenting materials appropriate for NWS training staff, or NWS general staff..

Appendix A. NWS Vision 2005

1.0 Deliver better products and services

Deliver a credible, timely, and relevant suite of seamless weather, water, and climate products and services which exploit technology to the fullest to meet customer and partner needs.

Our passion is to meet our customer and partner needs. It is the essence of our mission delivery. Our highest priority is to translate customer and partner needs into products and services that are trusted when needed most. We will meet these needs with a seamless suite of weather, water, and climate products of increasingly higher resolution and accuracy.

1.1 Expand and improve the existing weather, water, and climate product and service line:

- Public Services
 - Increase the accuracy and timeliness of NWS warnings
 - Extend the time periods and improve the accuracy and formats of weather, water, and climate forecast products.
 - Improve the accessibility and availability of weather, water, and climate information to the American people.
- Emergency Management
 - Enhance partnerships with the emergency management community and increase the lead time for information delivered on emergency weather and water situations.
- Marine Services
 - Extend and improve the accuracy of marine (wind and wave) forecasts.
 - Improve the format and distribution of marine products.
- Flood forecasting and water management
 - Improve accuracy and lead time of hydrological forecasts and relevance of products.
- Fire services
 - Implement a seamless suite of fire-weather products and services uniformly across the Nation.
- Space Services
 - Integrate space weather forecasts into the NWS operational product suite.

1.2 Produce a seamless suite of products and services.

- Produce a seamless suite of products and services linking weather, water, and climate with an emphasis on emerging climate products.
- Improve the use, integration, quality, and cost effectiveness of observations.

1.3 Nurture critical partnerships to provide effective and efficient delivery of NWS products and services.

1.4 Implement a customer service improvement plan.

- 2.0 Capitalize on scientific and technological advances**
Aggressively and continually infuse science and technological advances to improve products and services that best meet and anticipate customer needs.
Sound science and innovative technologies are the foundation of NWS product and service quality. Improving products and services to meet customer and partner needs in the future is critically dependent on providing a well trained work force with a continual infusion of new and proven scientific ideas and technological systems.
- 2.1 As operational leaders in weather, water, and climate, expand cooperation with the entire research community to promote and guide research and development toward product- and service-improvement goals.
 - 2.2 Reduce the time required to implement proven research and technology into operations.
 - 2.3 Improve data assimilation systems and numerical forecasts.
 - 2.4 Improve understanding and prediction of long-term climate variability.
 - 2.5 Prepare and disseminate NWS products in a form that offers a high resolution and maximum flexibility to customers and partners.
- 3.0 Exercise global leadership.**
Strengthen the U.S. leadership on emerging applications of weather, water, and climate information to meet environmental and economic challenges.
Global weather, water, and climate issues will dominate the attention of the international community through 2005 and beyond. Economic and technological linkages among countries will further translate international concerns to the local level and from the local to regional and global levels. NOAA/NWS is positioned to take advantage of emerging applications to work with our partners in addressing global challenges for the betterment of the Nation and the world. We are poised with the tools, capabilities, and partnerships to seize the opportunity to provide leadership for these emerging and existing challenges.
- 3.1 Promote the open exchange of data and information worldwide.
 - 3.2 Increase U.S. participation in international activities.
 - 3.3 Foster national and international education efforts and technology transfer programs.
 - 3.4 Continue U.S. leadership in the International Tsunami and Volcanic Ash Programs.
- 4.0 Change the NWS organizational culture**
Work with our people to create an organizational culture which embraces change; values service; promotes teamwork with customers, partners, and each other; and fosters innovation in mission and vision accomplishment.
The heart and soul of the NWS are its people. They accomplish the mission and convert the vision into reality. With energized, highly trained, and service-oriented people, we will achieve success. We are committed to building on the organizational culture which embraces change, values service and professionalism, and promotes teamwork in serving our customers and partners.
- 4.1 Implement human resource and management practices to support our Vision and reflect our Core Values.
 - 4.2 Place decision and budget authority at the lowest and most effective levels.
 - 4.3 Encourage, recognize, and reward innovation at all levels, especially for improved service to customers.
 - 4.4 enhance the professional development and training program for our work force to include teamwork, leadership, diversity, EEO, customer service, and implementing change.
 - 4.5 Capitalize on the diversity of our work force to improve participation, communication, and overall organizational performance.
 - 4.6 Increase the representation of women and minorities in NWS.

5.0 **Manage NWS resources**

Create a responsive support system, adaptable to changing needs and opportunities which maximizes the return on investment to America.

Supporting the mission and vision of the NWS are the critical systems, processes, relationships, mechanisms, and equipment. Our support systems must be quickly adaptable to changing conditions and challenges. We are committed to shaping our infrastructure to facilitate the effective, productive, and cost-effective delivery of products and services to our customers and partners.

- 5.1 Implement an integrated policy, planning, budgeting, assessment, and accountability system that links decision making and goals to program implementation and evaluation.
 - Link planning processes into a system that cascades from strategic to operational to individual performance plans.
 - Ensure operational costs are the minimum required to carry out the NWS mission and meet the goals of this strategic plan.
- 5.2 Leverage information technology to improve the cost effectiveness of NWS systems, programs, and operations.

Appendix B. Los Alamos National Laboratory Self-Directed Learning Tools

http://www.hr.lanl.gov/td/leadership/pss/sdl_tools.html

Appendix C. American Society for Training and Development Sample Website Resources

http://www.astd.org/virtual_community/Comm_elmg_rdmmap/Roadmap.html

http://www.learningcircuits.org/may2000/may2000_toc.html

http://www.learningcircuits.org/current_ezine_main.html

Appendix D. NOAA Diversity Council Work-Life Resource Pages

<http://www.rdc.noaa.gov/~Diversity/worklife.html>

<http://www.rdc.noaa.gov/~Diversity/opmworkfam.html>

Appendix E. Overview of NOAA-Wide SFA Results

<http://www.rdc.noaa.gov/~Diversity/noaawide.htm>

Note the results to the question: How does the level of job satisfaction vary by job category:

89% <= Executive

82% <= Mid/Top-level Manager

82% <= Management Official

76% <= First-level Manager

70% <= Professional/Technical

65% <= Administrative/Clerical

63% <= Other

These numbers suggest that the highest levels of satisfaction are among decisionmakers, with considerable opportunity for improving morale and productivity among professional/technical/administrative/clerical and other personnel (e.g. the bulk of NOAA s staff).

Also: How satisfied are you in the following 15 dimensions that research has shown to be representative of healthy companies.

65% <= EEO

64% <= Employee Involvement

63% <= Teamwork

62% <= Supervision

60% <= Work Environment

57% <= Innovation

55% <= Training/Career Development

53% <= Fairness/Treatment of Others

51% <= Communication

50% <= Use of Resources

49% <= Customer Focus

47% <= Rewards and Recognition

45% <= Strategic Planning

41% <= Org. Measures

39% <= Leadership

Does this suggest (1) the opportunity for improving the satisfaction level of staff regarding training and career development, and (2) the opportunity for training as a vehicle to improve staff satisfaction in some of the lower-rated fields (e.g. customer focus, communication, use of resources, fairness & treatment of others)?

**Appendix F. U. S. Office of Personnel Management Study:
Appropriateness of Non-Technical Training: October 1996 - September 1997**

<http://www.opm.gov/studies/nontectr.pdf>

Other Special Studies on the Federal Civil Service

<http://www.opm.gov/studies/main.htm>